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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/773,627	02/02/2001	Hideyuki Ariyasu	0152-0551P-SP	7701

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BIRCH STEWART KOLASCH & BIRCH  
PO BOX 747  
FALLS CHURCH, VA 22040-0747

EXAMINER
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KRUER, KEVIN R

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 07/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/773,627	<b>Applicant(s)</b> ARIYASU ET AL.	
	<b>Examiner</b> Kevin R Kruer	<b>Art Unit</b> 1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☐ Claim(s) 1,3-18 and 20-25 is/are pending in the application.
- 4a) Of the above claim(s) 25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1,5-16,18 and 20-24 is/are rejected.
- 7) ☐ Claim(s) 3,4 and 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 24, 2004 has been entered.

### ***Priority***

2. Applicant has claimed priority to Japanese Patent Applications JP 2000-025401 filed 02/02/2000; JP2000-120550 filed 04/21/2000; and JP 2000-255571 08/25/2000.
3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Election/Restrictions***

4. Claim 25 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

### ***Drawings***

5. The drawings filed February 2, 2001 are accepted.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 5, 9, 10, 11, 13, 14, 16, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10-029276 (herein referred to as Polyplastics) in view of Blemberg et al (US 5,108,844).

Polyplastics teaches a high mechanical strength laminate obtained by laminating a polyacetal resin layer (herein relied upon to read on claimed structural member C) and an olefin resin layer (herein relied upon to read on claimed structural member B) and an adhesive layer containing modified olefin (herein relied upon to read on molded layer C) (paragraph 0008). The olefin resin layer may comprise C<sub>2-12</sub> homopolymers (0025) such as LDPE, MDPE, HDPE, LLDPE and block or random copolymers of said olefins (0026). Graft copolymers may also be utilized (0025) and are herein understood to read on the claimed "modified olefinic polymer" of claim 16. Said laminate is especially useful in molding materials (paragraph 0005) and is made by processes such as melt extrusion molding or blow molding (claim 10).

With regard to claim 5, Polyplastics teaches that the terminal of the polyacetal may be stabilized by esterification with carboxylic acid and have a weight average molecular weight of 2,000-500,000 (0021). Furthermore, the preferred polyacetal is a copolymer of oxymethylene and oxyethylene units (0009). The examiner takes the position that the claimed hydroxyalkyl group terminal concentration is inherent to polymers that have been terminated by esterification with carboxylic acid and have said molecular weight.

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Polyplastics does not teach that the adhesive layer should additionally comprise polyacetal. However, Blemberg teaches that, if layers X and Y are directly adjacent to one another, adhesive between said layers can be improved by blending 10-30wt% of Y into layer X, and 10-30wt% of X into layer Y (col 2, lines 13+). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add 10-30wt% of polyacetal to the adhesive layer taught in Polyplastics. The motivation for doing so would have been to improve adhesion between the polyacetal layer and the adhesive layer.

With regards to claims 9 and 11, Polyplastics does not teach that the adhesive layer should additionally comprise a non-modified olefin polymer. However, Blemberg teaches that, if layers X and Y are directly adjacent to one another, adhesive between said layers can be improved by blending 10-30wt% of Y into layer X, and 10-30wt% of X into layer Y (col 2, lines 13+). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add the olefin utilized in the olefin resin layer to the adhesive layer taught in Polyplastics. The motivation for doing so would have been to improve adhesion between the olefin resin layer and the adhesive layer.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10-029276 (herein referred to as Polyplastics) in view of Blemberg et al (US 5,108,844), as applied to claims 1, 5, 9, 10, 11, 13, 14, 16, 21, and 22 above, and further in view of Sakurai et al (US 4,377,667).

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Polyplastics in view of Blemberg is relied upon as above. Specifically, Polyplastics teaches that the polyacetal should comprise have a molecular weight of 2,000 to 500,00 range (00021) and comprise copolymers of two or more components (0009). Polyplastics does not teach that the composition should comprise an aliphatic alcohol chain transfer agent. However, Sakurai discloses that molecular weights of polyacetals can be controlled by utilizing small amounts of water, methanol, and formic acid in the polymerization system (col 7, lines 35+). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include water or methanol in the polymerization system of Polyplastics. The motivation for doing so would have been to control the degree of polymerization.

9. Claims 7, 8, 12, 15, 20, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10-029276 (herein referred to as Polyplastics) in view of Blemberg et al (US 5,108,844) as applied to claims 1, 5, 9, 10, 11, 13, 14, 16, 21, and 22 above, and further in view of Matsuzaki et al (US 4,535,127).

Polyplastics in view of Blemberg is relied upon as above, but does not teach that the polyacetal should comprise the claimed block copolymer. However, Matsuzaki teaches a polyacetal copolymer composed of an acetal polymer portion and a thermoplastic elastomer portion having soft segments and hard segments (abstract). Said polymers have excellent impact resistance and fatigue resistance (col 1, lines 5+). The acetal can be made by copolymerizing formaldehyde or trioxane (cyclic acetals) with cyclic ethers (col 4, lines 22+) and should have a molecular weight of 10,000-500,000. The hard segment comprises ethylene propylene copolymers (the examiner

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notes that "ethylene propylene copolymers are synonymous in the art with hydrogenated polybutadiene (col 2, lines 53+). The elastomer portion of the polymer comprises 0.5-50M% of the polymer (col 6, lines 58+). The examiner understands such a teaching to read on the claimed molecular weight limitation of the "hydrogenated butadiene segment" in claim 8 because 0.5-50M% of 10,000-50,000 reads on the claimed molecular weight range. The polyacetal portion of the copolymer may comprise an acetal copolymer wherein the oxyalkylene is randomly inserted into a chain of recurring oxymethylene units at a frequency of 0.05-50 moles per 100 moles of oxymethylene (col 6, lines 26+).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the copolymer of Matsuzaki as the polyacetal taught in Polyplastics. The motivation for doing so would have been because said copolymer has excellent impact resistance and fatigue resistance.

With respect to the chain transfer agent of claim 7, the examiner takes the position that the identity of said transfer agent does not inherently affect the properties of the claimed copolymer. Thus, the copolymer taught in Matsuzaki is understood to read on the copolymer claimed in claim 7.

With respect to claims 23 and 24, the preamble limitation is not considered a limitation and is of no significance to claim construction because the preamble merely states the purpose or intended use of the invention (see MPEP 2111.02).

10. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10-029276 (herein referred to as Polyplastics) in view of Blemberg et al (US 5,108,844) as

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applied to claims 1, 5, 9, 10, 11, 13, 14, 16, 21, and 22 above, and further in view of JP 58-053953A (herein referred to as JSR).

Polyplastics in view of Blemberg is relied upon as above, but does not teach that the polyolefin layer may also contain polyamide. However, JSR teaches that aromatic polyamide fibers may be added to the polyolefin composition in order to control the compositions mechanical properties (abstract). Therefore, it would have been obvious to one of ordinary skill in the art to add aromatic polyamide fibers to the polyolefin layer taught in Polyplastics in order to improve the laminate's mechanical properties.

***Allowable Subject Matter***

11. Claims 3, 4, and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

12. The rejection of claims 1-5, 9-11, 13, 14, 16, and 17 under 35 U.S.C. 103(a) as being unpatentable over Kodera et al (US 4,250,661) in view of Blemberg et al (US 5,108,844) has been overcome by amendment.

13. The rejection of claim 6 under 35 U.S.C. 103(a) as being unpatentable over Kodera et al (US 4,250,661) in view of Blemberg et al (US 5,108,844), as applied to claims 1-5, 9-11, 13, 14, 16, and 17 above, and further in view of Sakurai et al (US 4,377,667) has been overcome by amendment.

14. The rejection of claims 7, 8, 12, 15, and 20 under 35 U.S.C. 103(a) as being unpatentable over Kodera et al (US 4,250,661) in view of Blemberg et al (US



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5,108,844), as applied to claims 1-5, 9-11, 13, 14, 16, and 17 above, and further in view of Matsuzaki et al (US 4,535,127) has been overcome by amendment.

Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection.

With respect to the rejection based upon Polyplastics in view of Blemberg, Applicant argues that the references cannot be combined because the two references take different approaches to improving adhesion between two different resin layers. "One modifies the nature of the layers joined and the other introduces a third adhesion layer between the two layers to be joined." The examiner respectfully disagrees with applicant's conclusion. Both Polyplastics and Blemberg recognize that adhesion between dissimilar layers (in the pending case, polyacetal and polyolefin) is insufficient. Each reference teaches various techniques in order to improve adhesion between said layers. The courts have held that a reference is analogous when the teaching is reasonably pertinent to a problem with which the inventors would have been interested. In the present case, both references are drawn to the same problem-adhesion between dissimilar layers. Thus, the examiner maintains the position they are analogous.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin R Kruer whose telephone number is 571-272-1510. The examiner can normally be reached on Monday-Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on 571-272-1516. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kevin R. Kruer  
Patent Examiner-Art Unit 1773